

**REMARKS**

**Status of the Claims**

Claims 43, 46, 47, and 50 are pending. Claims 1-42, 44, 45, 48 and 49 have been canceled without prejudice or disclaimer of the subject matter claimed therein.

Claims 43 and 47 have been amended. Support for the amendments to claims 43 and 47 can be found in original claim 45 or 48. The amendments to claims 43 and 47 do not introduce prohibited new matter.

**Rejection under 35 U.S.C. 112, Second Paragraph**

Claims 43-48 and 50 are rejected under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Office Action alleges that the phrase “mutant form of a fatty acid desaturase” is unclear. Applicants respectfully submit that claims 44, 45 and 48 have been canceled and claims 43 and 47 have been amended to recite “a mutant form of a fatty acid desaturase in which one or more histidine residues have been mutated as compared to a wild type form of the fatty acid desaturase.” Thus, claims 43 and 47 and their dependent claims are clear.

**Rejections under 35 U.S.C. 112, First Paragraph**

A. Claims 43, 44, 46, 47 and 50 are rejected under 35 U.S.C. 112, first paragraph, for allegedly failing to comply with the written description requirement.

The Office Action alleges that the specification does not describe all the structural changes that could be made to a fatty acid desaturase that would result in a dominant negative mutant.

Applicants respectfully submit that claims 43 and 47 have been amended to recite “a mutant form of a fatty acid desaturase in which one or more histidine residues have been mutated as compared to a wild type form of the fatty acid desaturase.” The specification describes genetically manipulating the gene of an enzyme to generate a modified amino acid sequence. Moreover, the specification describes mutant forms of a fatty acid desaturase in which one or more histidine residues have been mutated on page 67, lines 6-19. Moreover, the Office Action

acknowledges that the specification describes a fatty acid desaturase in which one or more histidine residues have been mutated (page 4 of Office Action). Accordingly, the claims as they stand comply with the written description requirement.

B. Claims 43-48 and 50 are rejected under 35 U.S.C. 112, first paragraph, for failing to comply with the enablement requirement.

The Office Action alleges that the specification does not provide any examples of a plant transformed with a sequence encoding a dominant negative mutant of a fatty acid desaturase that results in decreasing a fatty acid desaturase activity.

As discussed above, claims 43 and 47 have been amended to recite “a mutant form of a fatty acid desaturase in which one or more histidine residues have been mutated as compared to a wild type form of the fatty acid desaturase.” The specification teaches genetically altering the nucleic acid sequence encoding a plant enzyme by mutagenesis. Moreover, Example 4 discloses producing transgenic plants having a mutated gene. As an example, Example 4 (page 67) describes transforming a plant with a gene that has been mutated by eliminating one or more histidine residues. Also, the specification in Figures 9A and 9B discloses the amino acid sequences for various fatty acid desaturases. Further, mutagenesis is routinely practiced by one having ordinary skill in the art. Accordingly, the specification provides adequate guidance and example for transforming plants with a nucleic acid encoding a mutant form of a fatty acid desaturase in which one or more histidine residues have been mutated. Thus, the specification enables the claimed invention.

Rejection under 35 U.S.C. 102(e)

Claims 43, 44, 46 and 50 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,372,965 to Lightner *et al.* (“Lightner”).

Claims 43 and 47 as they stand are directed to a method of altering an amount of an unsaturated fatty acid in a seed of a plant comprising decreasing a fatty acid desaturase activity in the seed by transforming the plant with a nucleic acid comprising a sequence which encodes a

mutant form of a fatty acid desaturase in which one or more histidine residues have been mutated as compared to a wild type form of the fatty acid desaturase.

The Office Action alleges that Lightner anticipates the claimed invention because Lightner discloses nucleic acid encoding a fatty acid desaturase and introducing the nucleic acid into *Glycine max*. However, Lightner does not disclose or suggest the claimed invention. Lightner neither discloses nor suggests a nucleic acid encoding a mutant fatty acid desaturase in which one or more histidine residues have been mutated. Moreover, Lightner does not teach or suggest introducing such a nucleic acid into a plant. Accordingly, Lightner neither anticipates nor render obvious the claimed invention.

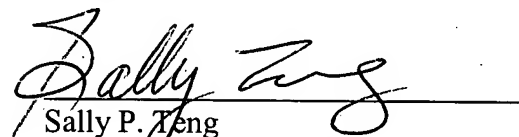
#### Conclusion

The foregoing amendments and remarks are being made to place the application in condition for allowance. Applicants respectfully request entry of the amendments, reconsideration, and the timely allowance of the pending claims. A favorable action is awaited. Should an interview be helpful to further prosecution of this application, the Examiner is invited to telephone the undersigned.

If there are any additional fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Dated: **July 10, 2007**  
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Respectfully submitted  
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